



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,789	07/15/2003	Steve Crump	02103-540001 / AABOSW13	7808
26162 7590 01/04/2007 FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			EXAMINER PENDLETON, BRIAN T	
			ART UNIT 2615	PAPER NUMBER

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/619,789

Applicant(s)

CRUMP ET AL.

Examiner

Brian T. Pendleton

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-9, 11-15, 18-20, 22-26, 29-32, 34-40, 43-51 and 54-66 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 10, 16, 17, 21, 27, 28, 33, 41, 42, 52 and 53 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 9, 24, 25, 36-38, 46, 49, 50, 60, 63 and 65 are rejected under 35 U.S.C. 102(b) as being anticipated by Jones, US Patent 6,118,878. Jones discloses an active noise reduction headset system comprising earpieces 1 and 2, headband 3, controller 6, microphone 28, and loudspeaker 22. Figure 14 discloses an embodiment of the controller 6 having headset circuitry 1416 and a power supply comprising battery 517 (DC voltage source) and voltage regulator 1418 (voltage converter circuit). As disclosed in column 20 line 12 – column 22 line 16, the voltage supplied to the amplifier 1416 is adjusted according to the noise level which is in response to changes in headset load current drawn by the amplifier 1416. Claim 1 is rejected. Regarding claims 24 and 25, figure 13 discloses an embodiment wherein there is headset circuitry 310 for receiving an input voltage from battery 517 through shutoff circuitry 1300. Per claims 36 and 37, there is disclosed headset circuitry and power supply circuitry in both figures 13 and 14. As to claim 38, figure 14 discloses a DC voltage source and converter circuit, as discussed above. Claims 49, 50 and 65 are rejected by figure 13. As to method claim 60, the apparatus of figure 14 discloses measuring a load current (via rectifier 1417) and supplying an input voltage in response to the load current (via voltage regulator 1418). Claim 63 is rejected by figure 14. Regarding claims 9 and 46, the voltage control loop is the rectifier 1417.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, 6-8, 13-15, 18-20, 39, 40, 43-45, 61, 62, and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones. In figure 14, Jones discloses an active noise reduction apparatus and method comprising headset circuitry (amplifier 1416), a direct current voltage source (battery 517), and voltage converter circuit 1418. Jones does not disclose a shutoff circuit for placing the headset circuitry in a lower power consumption state when the headset load current falls below a threshold in figure 14. Nonetheless, figure 13 discloses a shutoff circuit comprising headset circuitry 310 and shutoff circuitry 1300 which has a microphone 300 for measuring when the load current falls below a threshold value. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the two embodiments of Jones and implement the shutoff circuitry along with the voltage regulating circuitry for the purpose of providing two advantageous solutions to power conservation in an active noise reduction headset. Claims 2, 3, 13, 14, 39, 40, 61, 62, and 64 are rejected. Regarding claims 6-8, 18-20, 43-45, Jones teaches that the voltage converter circuit 1418 directly varies its voltage according to the amplitude of the headset circuitry signals. Therefore, one of ordinary skill in the art would be motivated to provide any function which displays a direct relationship between headset circuitry current and input voltage to the circuitry (increasing voltage for increasing headset load current) and decreasing voltage for decreasing headset load current). It would have been obvious

Art Unit: 2615

to one of ordinary skill in the art at the time of invention to use any of the claimed functions as they provide equally effective methods of directly relating headset load current to input voltage.

Regarding claim 15, the voltage control loop is the rectifier 1417.

Claims 26, 29-32, 51, 54-57, and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones. In figure 13 discloses a shutoff circuit comprising headset circuitry 310, direct current voltage source 517, and shutoff circuitry 1300 which has a microphone 300 for measuring when the load current falls below a threshold value. Jones does not disclose a voltage converter circuit for converting the power from the direct current voltage source to the input voltage supplied to the headset circuitry whereby the input voltage is varied in response to changes in the headset load current drawn by the headset circuitry. In figure 14, Jones discloses an active noise reduction apparatus and method comprising headset circuitry (amplifier 1416), a direct current voltage source (battery 517), and a voltage converter circuit 1418 for varying the input voltage to the headset circuitry. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the two embodiments of Jones and implement the voltage converter circuitry along with the shutoff circuitry for the purpose of providing two advantageous solutions to power conservation in an active noise reduction headset. Claims 26, 51, and 66 are rejected. Regarding claims 29-31 and 54-56, Jones teaches that the voltage converter circuit 1418 directly varies its voltage according to the amplitude of the headset circuitry signals. Therefore, one of ordinary skill in the art would be motivated to provide any function which displays a direct relationship between headset circuitry current and input voltage to the circuitry (increasing voltage for increasing headset load current) and decreasing voltage for decreasing headset load current). It would have been obvious to one of ordinary skill in the

Art Unit: 2615

art at the time of invention to use any of the claimed functions as they provide equally effective methods of directly relating headset load current to input voltage. Regarding claims 32 and 57, the voltage control loop is the rectifier 1417.

Claims 11, 12, 22, 23, 34, 35, 47, 48, 58, and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones in view of Andersen et al, US Patent 6,829,364. Jones does not disclose an energy storage device in parallel with the DC voltage source. Andersen et al teach an apparatus comprising battery 14 (DC voltage source) in parallel with capacitor 12 (energy storage device). The benefit of the capacitor 12 was to extend the life of the battery's operating period. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Jones by including a capacitor in parallel with the battery 517 for the purpose of extending the operating period of the ANR headset. Claims 11, 12, 47, and 48 are rejected. Regarding claims 22, 23, 34, 35, 58 and 59, as discussed above, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the shutoff circuitry and voltage regulating circuitry of Jones. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of invention to implement a capacitor to increase the battery life of the voltage source 517.

Allowable Subject Matter

Claims 4, 5, 10, 16, 17, 21, 27, 28, 33, 41, 42, 52, and 53 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wurtz, US Patent Application Publication 2004/0258253.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian T. Pendleton whose telephone number is (571) 272-7527. The examiner can normally be reached on M-F 7-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Brian T. Pendleton
Primary Examiner
Art Unit 2615



btp